June 2, 1931. W. C. DEVEREAUX 1,807,775

DOOR LOCK

Filed Jan. 28, 1924

Fig. 1.

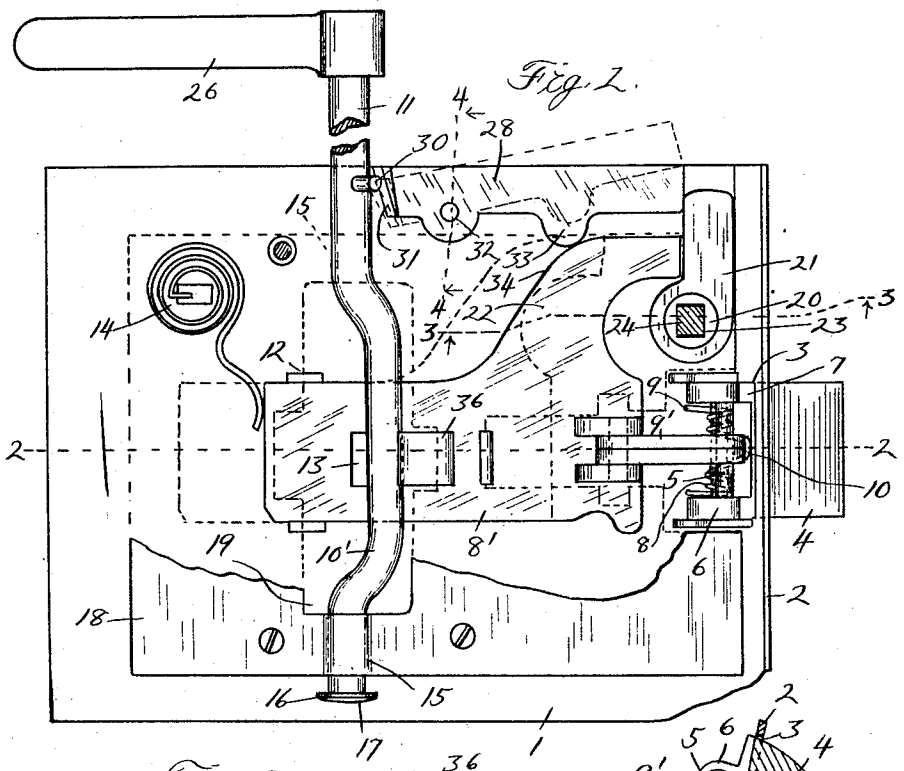


Fig. 2.

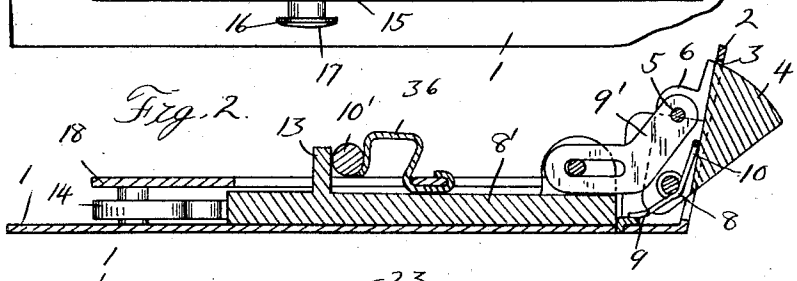


Fig. 3.

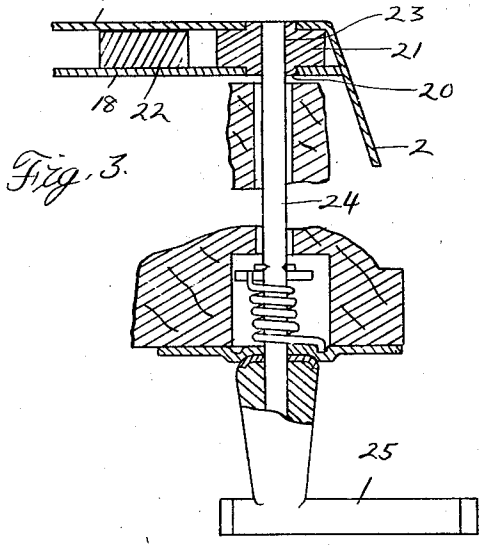
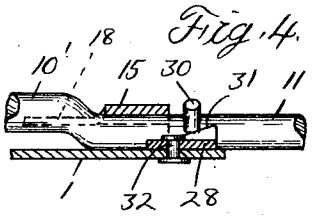


Fig. 4.



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Patented June 2, 1931 1,807,775

UNITED STATES PATENT OFFICE

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DOOR LOCK

Application filed January 28, 1924. Serial No. 689,108.

This invention relates generally to locks and latches and refers more particularly to vehicle door latches having swingingly mounted locking bolts which may be actuated from either the outside or inside of the vehicle.

One of the essential objects of the invention is to provide simple and effective means adapted to be actuated by the inside operating mechanism for rendering the outside operating mechanism inoperative.

With the above and other objects in view, the invention consists of certain novel features of construction, combinations and arrangements of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a rear elevation of a door latch embodying my invention and showing the cover plate partially broken away;

Figures 2, 3 and 4 are cross sections respectively on the lines 2—2, 3—3 and 4—4 of Figure 1.

The numeral 1 designates a case plate secured to the inner side of a vehicle door and having a laterally extending flange 2 secured to the outer edge of the door. Extending through an opening 3 in the flange 2 is a latch bolt 4 that is adapted to engage a suitable keeper (not shown) to hold the door in closed position. This bolt is preferably pivoted on a pin 5 extending through flanges 6 of a substantially U-shaped bracket 7 rigidly secured to the case plate 1 in rear of the flange 2 and is normally held in extended position for engagement with the keeper by means of a coil spring 8 having arms 9 and 10 respectively abutting the case plate and bolt.

For retracting the bolt to release the door, I preferably provide a reciprocatory bar 8′ that is connected by a link 9′ to the bolt 4 and that is adapted to be actuated by the crank portion 10′ of a vertical spindle 11. The bar 8′ is slidably mounted on the plate 1 between struck-out ears 12 and is preferably provided with a lateral lug or projection 13 that is normally held in engagement with the crank portion 10′ of the spindle by means of a helical spring 14 anchored on the case plate. The spindle 11 is journaled on the case plate between spaced struck-out bearings 15 and is prevented from moving vertically thereon by a ring 16 secured to the spindle at the lower end thereof and extending through an elongated opening 17 in the plate 1. A cover plate 18 is preferably secured to the case plate 1 and flange 2 and is provided with a substantially T-shaped open-ended slot 19 for receiving the working parts of the latch.

In order that the bolt 4 may be retracted without moving the spindle 11 by a person outside the vehicle, I preferably provide a rollback that has a rotatable hub 20 journaled in the case plate and cover plate and that has an upstanding actuating arm 21 engageable with the forward end of a curved arm 22 projecting upwardly from the upper edge of the bar 8′. The hub 20 is also provided with a polygonal opening 23 that receives the operating shank 24 of a suitable handle 25. Thus, when the arm 21 is rocked by the handle 25 to retract the bolt, the lug 13 on the bar 8′ will be disengaged from the crank portion 10′ of the spindle. Likewise, when the spindle is rotated by a suitable handle 26 at the upper end thereof to retract the bolt, the arm 22 will be moved away from the actuating arm 21 so that the handle 25 will remain in normal position.

In order that the bolt may be locked in extended position by a person inside the vehicle so that the outside operating handle 25 will be rendered inoperative, I preferably provide a dog 28 that is pivoted on the case plate 1 and that is adapted to be swung downwardly in rear of the actuating arm 21 to prevent movement thereof in a counter-clockwise direction by the outside operating handle. Inasmuch as the arm 21 is normally in engagement with the flange 2 of the case plate, the hub 20 will also be held against rotation in a clockwise direction. It will also be noted that the arm 21 serves as a stop to limit the forward movement of the bar 8.

The spindle 11 is preferably used to swing the dog 28 downwardly into locking position and for this purpose there is a pin 30 that projects laterally from the spindle and

that is adapted to engage a cam 31 projecting laterally from the dog, preferably, at a point in rear of the pivot 32 therefor. Thus, when the handle 26 is swung in a horizontal arc to the right, the pin 30 will engage the cam 31 and will force the forward end of the dog 28 downwardly into locking position in rear of the arm 21. To release the dog, when the handle 26 is swung to the left to retract the bolt 4, I preferably provide the lower edge of the dog with a projection 33 that is located in advance of the pivot 32 and that is adapted to engage the curved rear edge 34 of the arm 22 when the latter is moved to the rear by the crank portion 10′ of the spindle. Thus, when the bar 8′ is moved to the rear the arm 22 will cause the forward end of the dog 28 to be raised out of the path of the arm 21 so that the outside handle may be operated.

For normally retaining the spindle 11 in neutral position, I preferably provide a curved spring 36 that is rigidly secured at one end to the cover plate 18 and that normally abuts the crank portion 10′ of the spindle.

From the foregoing description it will be readily apparent that I have provided a very simple and effective means for locking the latch bolt in extended position so that it cannot be retracted by the outside operating handle. Furthermore, this locking means may be actuated automatically by the inside operating mechanism.

What I claim as my invention is:

1. In a lock, the combination with a case plate, a locking bolt carried thereby, and a bar slidably mounted upon the case plate and operatively connected to said bolt, said bar having an upstanding arm and a lateral projection, of means for retracting said bolt including a rollback engageable with said arm and an upright member engageable with said lateral projection, and means for rendering said rollback inoperative including a part located between said rollback and upright member and having a cam portion, and an element projecting laterally from the upright member engageable with said cam portion, said part having a projection adapted to be engaged by said arm for rendering said part inoperative.

2. In a door latch, the combination with a latch bolt, and a member for retracting said bolt, of means for dogging said member including a pivotally mounted element having a wedge-shaped portion projecting laterally therefrom, a second bolt retracting member, and a pin projecting laterally from said second bolt retracting member and engageable with the wedge-shaped portion of said element.

3. In a door latch, the combination with a latch bolt, and a member for retracting said bolt, of means for rendering said member inoperative including a dog engageable with said member and having a wedge-shaped portion projecting laterally therefrom, a second bolt retracting member, and a pin projecting laterally from said second bolt retracting member and engageable with the wedge-shaped portion of said dog.

In testimony whereof I affix my signature.

WILLIAM C. DEVEREAUX.